What is claimed is:

1. An analog-to-digital converter system that is configured to provide a digital output signal in response to an analog input signal, the system comprising:

an overranging analog-to-digital converter that is arranged to convert an intermediary analog signal into an intermediary digital signal, wherein: the intermediary analog signal is related to the analog input signal, an output range associated with the overranging analog-to-digital converter extends beyond a full dynamic range of the analog-to-digital converter system, the intermediary digital signal has a first number of bits of resolution; and

a digital fine offset adjustment circuit that is configured to determine a fine offset during a calibration phase, and further configured to process the intermediary digital signal during a conversion phase such that: the determined fine offset is digitally subtracted from the intermediary digital signal to provide an offset adjusted digital signal, and the offset adjusted digital signal is decoded to provide the digital output signal such that the digital output signal has a second number of bits of resolution, wherein the first number of bits of resolution is greater than the second number of bits of resolution.

2. The analog-to-digital converter system of Claim 1 further comprising:

a coarse offset calibration circuit that is configured to adjust a course calibration control signal in response to the intermediary digital signal during the calibration phase; and

a coarse correction circuit that is arranged to perform coarse correction on the analog input signal to provide the intermediary analog signal, wherein the coarse correction circuit is responsive to the coarse calibration control signal.

3. The analog-to-digital converter system of Claim 2, wherein the coarse correction circuit is configured to provide coarse offset adjustment and the digital fine offset adjustment circuit is configured to provide fine offset calibration such that the digital output signal has approximately no offset.

4. The analog-to-digital converter system of Claim 2, wherein the coarse correction circuit comprises:

a coarse digital-to-analog converter block that is configured to convert the coarse calibration control signal into a coarse analog signal;

a summer block that is configured to produce a sum signal in response to the analog input signal and the coarse analog signal, wherein the sum signal corresponds to a sum of the analog input signal and the coarse analog signal such that the sum signal corresponds to an offset corrected version of the analog input signal; and

a programmable gain amplifier block that is arranged to scale the sum signal according to a gain factor to provide the intermediary analog signal, wherein the gain factor is selected such that a voltage range of the intermediary analog signal approximately corresponds to the full dynamic range.

5. The analog-to-digital converter system of Claim 1, wherein the overranging analog-to-digital converter corresponds to at least one of a flash-type analog-to-digital converter and a pipeline-type analog-to-digital converter.

6. The analog-to-digital converter system of Claim 1, wherein the output range of the overranging analog-to-digital converter includes the full dynamic range, a lower overrange, and an upper overrange.

7. The analog-to-digital converter system of Claim 6, wherein the analog-to-digital converter system is configured for operation from a first reference signal and a second reference signal, wherein the full dynamic range consists of digital codes that are associated with a range of voltages from a first voltage associated with the first reference signal to a second voltage associated with the second reference signal, the lower overrange consists of digital codes that are associated with voltages that are below the second voltage, and the upper overrange consists of digital codes that are associated with voltages that are above the first voltage.

8. The analog-to-digital converter system of Claim 7, wherein: the first number of bits of resolution corresponds to 10.25, the second number of bits of resolution corresponds to 10, the overranging analog-to-digital converter corresponds to a 10.25 bit pipeline overranging analog-to-digital converter, the first voltage corresponds to approximately 1 volt, and the second voltage corresponds to approximately –1 volt.

9. The analog-to-digital converter system of Claim 7, wherein the overranging analog-to-digital converter comprises: a reference extending circuit and a flash-type converter circuit, wherein the reference extending circuit configured to provide a first local reference signal and a second local reference signal from the first reference signal and the second reference signal, wherein a third voltage associated with the first local reference signal is greater than the first voltage, a fourth voltage associated with the second local reference signal is less than the first voltage, and wherein the flash-type converter circuit is operated from the first local reference signal and the second local reference signal such that the flash-type converter circuit has a dynamic range that extends beyond the first voltage and the second voltage.

10. The analog-to-digital converter system of Claim 1, wherein the overranging analog-to-digital converter comprises: a digital correction circuit, a first pipeline stage converter, and a second pipeline stage converter, wherein the first pipeline stage converter includes a flash-type analog-to-digital converter and a multiplying-type analog-to-digital converter, wherein the flash-type analog-to-digital converter is configured to identify one of a plurality of voltages ranges that is associated with the intermediate analog voltage, wherein the multiplying-type analog-to-digital converter is configured to provide a residue signal that is shifted by a DC level, wherein the DC level is selected according to the identified voltage range, and wherein the residue signal is provided as an input to the second pipeline stage converter.

11. A method of providing a digital output signal in response to an analog input signal, the method comprising:

converting an intermediary analog signal into an intermediary digital signal, wherein the intermediary analog signal is related to the analog input signal, a dynamic range associated with the intermediary digital signal extends beyond a full dynamic range associated with the digital output signal, the intermediary digital signal has a first number of bits of resolution, the digital output signal has a second number of bits of resolution, and wherein the first number of bits of resolution is greater than the second number of bits of resolution;

determining a fine offset in response to the intermediate digital signal during a calibration phase; and

digitally subtracting the fine offset from the intermediary digital signal to provide an offset adjusted digital signal, wherein the offset adjusted digital signal corresponds to an offset adjusted version of the intermediate digital signal.

12. The method of Claim 11, further comprising decoding the offset adjusted digital signal to provide the digital output signal, wherein the digital output signal is within the full dynamic range.

13. The method of Claim 11, the method further comprising:

performing coarse correction on the analog input signal in response to a coarse calibration control signal to provide the intermediate analog signal; and

providing the coarse calibration control signal in response to the intermediary digital signal;

wherein performing coarse correction comprises:

converting the coarse calibration control signal into a coarse analog signal;

producing a sum signal in response to the analog input signal and the coarse analog signal, wherein the sum signal corresponds to a sum of the analog input signal and the coarse analog signal such that the sum signal corresponds to an offset corrected version of the analog input signal; and

scaling the sum signal according to a gain factor to provide the intermediary analog signal, wherein the gain factor is selected such that a

voltage range of the intermediary analog signal approximately corresponds to the full dynamic range.

14. The method of Claim 11, wherein the output range of the intermediate digital signal includes a lower overrange and an upper overrange.

15. A analog-to-digital converter system that is configured to provide a digital output signal in response to an analog input signal, the system comprising:

a first means for converting that is arranged to convert an intermediary analog signal into an intermediary digital signal, wherein the intermediary analog signal is related to the analog input signal, an output range of the means for converting extends beyond a full dynamic range of the analog-to-digital converter system, the intermediary digital signal has a first number of bits of resolution, the digital output signal has a second number of bits of resolution, and wherein the first number of bits of resolution is greater than the second number of bits of resolution;

a means for determining that is configured to determine a fine offset in response to the intermediate digital signal during a calibration phase; and

a means for subtraction that is configured to digitally subtract the fine offset from the intermediary digital signal to provide an offset adjusted digital signal, wherein the offset adjusted digital signal corresponds to an offset adjusted version of the intermediate digital signal.

16. The analog-to-digital converter system of Claim 15, further comprising:

a means for correcting that is arranged to perform coarse correction on the analog input signal to provide the intermediary analog signal, wherein the means for correcting is responsive to a coarse calibration control signal; and

a second means for providing that is configured to provide the coarse calibration control signal in response the intermediate digital signal;

wherein the means for correcting comprises:

a second means for converting that is configured to convert the coarse calibration control signal into a coarse analog signal;

a means for summing that is configured to produce a sum signal in response to the analog input signal and the coarse analog signal, wherein the sum signal corresponds to a sum of the analog input signal and the coarse analog signal such that the sum signal corresponds to an offset corrected version of the analog input signal; and

a means for scaling that is configured to scale the sum signal according to a gain factor to provide the intermediary analog signal, wherein the gain factor is selected such that a voltage range of the intermediary analog signal approximately corresponds to the full dynamic range.

17. The analog-to-digital converter system of Claim 15, further comprising a means for decode that is configured to decode the offset adjusted digital signal to provide the digital output signal, wherein the digital output signal is within the full dynamic range.

18. The analog-to-digital converter system of Claim 15, wherein the first means for converting comprises one of a flash-type analog-to-digital converter and pipeline-type analog-to-digital converter.

19. The analog-to-digital converter system of Claim 15, wherein the output range of the overranging analog-to-digital converter includes the full dynamic range, a lower overrange, and an upper overrange, the analog-to-digital converter system is configured for operation from a first reference signal and a second reference signal, wherein the full dynamic range consists of digital codes that are associated with a range of voltages from a first voltage associated with the first reference signal to a second voltage associated with the second reference signal, the lower overrange consists of digital codes that are associated with voltages that are below the second voltage, and the upper overrange consists of digital codes that are associated with voltages that are above the first voltage.